

Supplemental Table 1: List of cancer diagnoses, surgical margins, post-operative liquid biopsy results, and 6-month follow-up information for the 49 patients from which detection of residual disease was assessed.

Diagnosis	Surgical margins	NGS-based liquid biopsy result at post-operative visit	Clinical recurrence within 6 months? (Yes/No)
Anal gland adenocarcinoma	Complete <5mm	<i>Cancer Signal Not Detected</i>	No
Anal gland adenocarcinoma	Incomplete	<i>Cancer Signal Not Detected</i>	No
Anal gland adenocarcinoma	Complete 5-10mm	<i>Cancer Signal Not Detected</i>	No
Apocrine sweat gland adenocarcinoma	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Fibrosarcoma (bone)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Hemangiosarcoma	Incomplete	<i>Cancer Signal Detected</i>	No
Hemangiosarcoma	Incomplete - Amputation	<i>Cancer Signal Not Detected</i>	Yes
Hemangiosarcoma	Complete - Splenectomy	<i>Cancer Signal Detected</i>	Yes
Hemangiosarcoma	Complete - Amputation	<i>Cancer Signal Detected</i>	Yes
Hemangiosarcoma	Complete - Splenectomy	<i>Cancer Signal Detected</i>	No
Hemangiosarcoma + Hepatocellular carcinoma + Soft tissue sarcoma + Malignant melanoma	Incomplete	<i>Cancer Signal Detected</i>	Yes
Hemangiosarcoma + Soft tissue sarcoma	Incomplete	<i>Cancer Signal Not Detected</i>	Yes
Hepatocellular carcinoma	Incomplete	<i>Cancer Signal Not Detected</i>	Yes
Hepatocellular carcinoma	Complete 5-10mm	<i>Cancer Signal Detected</i>	Yes
Hepatocellular carcinoma + insulinoma	Complete >10mm	<i>Cancer Signal Not Detected</i>	No
Histiocytic sarcoma	Complete - Unknown	<i>Cancer Signal Detected</i>	Yes
Histiocytic sarcoma	Complete - Lung lobectomy	<i>Cancer Signal Not Detected</i>	Yes
Malignant melanoma	Complete 5-10mm	<i>Cancer Signal Not Detected</i>	No
Malignant melanoma	Incomplete	<i>Cancer Signal Not Detected</i>	Yes

Oral sarcoma	Incomplete	<i>Cancer Signal Detected</i>	Yes
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Detected</i>	Yes
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	Yes
Osteosarcoma (appendicular)	Complete >10mm	<i>Cancer Signal Not Detected</i>	Yes
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Detected</i>	No
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Detected</i>	Yes
Osteosarcoma (appendicular)	Complete - Unknown	<i>Cancer Signal Not Detected</i>	Yes
Osteosarcoma (appendicular)	Complete <5mm	<i>Cancer Signal Not Detected</i>	Yes
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	Yes
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
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Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma (appendicular)	Complete >10mm	<i>Cancer Signal Detected</i>	Yes
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Detected</i>	Yes
Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma (appendicular)	Complete <5mm	<i>Cancer Signal Detected</i>	Yes

Osteosarcoma (appendicular)	Complete - Amputation	<i>Cancer Signal Not Detected</i>	Yes
Osteosarcoma (non-appendicular)	Complete - Unknown	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma (non-appendicular)	Incomplete	<i>Cancer Signal Not Detected</i>	No
Osteosarcoma + Mast cell tumor	Complete - Amputation	<i>Cancer Signal Detected</i>	Yes
Soft tissue sarcoma	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No
Soft tissue sarcoma	Complete - Amputation	<i>Cancer Signal Not Detected</i>	No